CLAIMS

What is claimed is:

1. A method for producing an ink-jet recording medium, comprising the steps of:

a) forming a hot-melt extrudable ink-receptive composition comprising a blend of about 50% to about 95% by weight of a melt-extrudable polyvinyl alcohol composition and about 5% to about 50% by weight of a compound selected from the group consisting of poly(2-ethyl-2-oxazoline), a hydrolyzed copolymer of ethylene and vinyl acetate, ethylene/acrylic acid copolymers and ethylene/methacrylic acid copolymers; and

b) melt-extruding the ink-receptive composition onto a substrate to form an ink-jet recording medium having a coated ink-receptive layer.

2. The method of claim 1, wherein the blend comprises 50% by weight of the poly(2-ethyl-2-oxazoline) and 50% by weight of the melt-extrudable polyvinyl alcohol composition.

3. The method of claim 1, wherein the blend comprises 10% by weight of the ethylene/acrylic acid copolymer and 90% by weight of the melt-extrudable polyvinyl alcohol composition.

4. The method of claim 1, wherein the blend comprises 10% by weight of the ethylene/methacrylic acid copolymer and 90% by weight of the melt-extrudable polyvinyl alcohol composition.

5. The method of claim 1, wherein the blend comprises 5% by weight of the poly(2-ethyl-2-oxazoline), 10% by weight of the ethylene/acrylic acid copolymer, and 85% by weight of the melt-extrudable polyvinyl alcohol composition.

6. The method of claim 1, wherein the ink-receptive composition further comprises a water-soluble polymer selected from the group consisting of polyethylene oxide, polypropylene oxide, polyethylene glycol, polypropylene glycol, polytetrahydrofuran, polyvinylmethylether, and copolymers and mixtures thereof.

7. The method of claim 6, wherein the ink-receptive composition further comprises a water-insoluble polymer selected from the group consisting of polyolefins, polyamides, polyesters, polyurethanes, and copolymers and mixtures thereof.

8. The method of claim 7, wherein the ink receptive composition further comprises inorganic or organic particulate.

9. The method of claim 7, wherein the ink receptive composition further comprises an additive selected from the group consisting of antioxidants, UV stabilizers, antistatic agents, anti-blocking agents, foaming agents, plasticizers, and optical brighteners.

10. The method of claim 1, wherein the substrate is a paper.

11. The method of claim 1, wherein the substrate is a film.

12. An ink-jet recording medium produced by the method of claim 1.

13. A method for producing an ink-jet recording medium, comprising the steps of:

a) forming a first hot-melt extrudable ink-receptive composition comprising a blend of about 50% to about 95% by weight of a melt-extrudable polyvinyl alcohol composition and about 5% to about 50% by weight of a compound selected from the group consisting of poly(2-ethyl-2-oxazoline), a hydrolyzed copolymer of ethylene and vinyl acetate, ethylene/acrylic acid copolymers and ethylene/methacrylic acid copolymers,

b) forming a second hot-melt extrudable ink-receptive composition comprising a blend of about 50% to about 95% by weight of a melt-extrudable polyvinyl alcohol composition and about 5% to about 50% by weight of a compound selected from the group consisting of poly(2-ethyl-2-oxazoline), a hydrolyzed copolymer of ethylene and vinyl acetate, ethylene/acrylic acid copolymers and ethylene/methacrylic acid copolymers, and

c) co-extruding the first and second ink-receptive compositions onto a substrate to form an ink-jet recording medium having multiple coated ink-receptive layers.

14. An ink-jet recording medium produced by the method of claim 13.

15. A method for producing an ink-jet recording medium, comprising the steps of:

a) forming a hot-melt extrudable ink-receptive composition comprising a blend of about 50% to about 95% by weight of a melt-extrudable polyvinyl alcohol composition and about 5% to about 50% by weight of a compound selected from the group consisting of poly(2-ethyl-2-oxazoline), a hydrolyzed copolymer of ethylene and vinyl acetate, ethylene/acrylic acid copolymers and ethylene/methacrylic acid copolymers;

b) forming a hot-melt extrudable tie composition comprising a polymer selected from the group consisting of polyurethane, ethylene-acrylic acid copolymer, ethylene-methacrylic acid copolymer, ethylene-acrylic acid-methacrylate terpolymer, poly(2-ethyl-2-oxazoline), and copolymers and mixtures thereof;

c) forming a hot-melt extrudable moisture barrier composition comprising a polymer selected from the group consisting of polyolefins, ethylene-acrylic acid copolymer, ethylene-acrylate copolymer, and polyester, and copolymers and mixtures thereof; and

d) co-extruding the ink-receptive, tie, and moisture barrier compositions onto a substrate to form an ink-jet recording medium having multiple ink-receptive layers.

16. An ink-jet recording medium produced by the method of claim 15.

17. A composite medium comprising at least a first sheet A and a second sheet B, wherein sheet A comprises a substrate A1 selected from the group consisting of transparent and translucent substrates and at least one layer A2 thereon, and sheet B comprises a substrate B1 and layer A2 comprises a thermoplastic composition that can be imaged by an ink jet printer using one or more inks comprising at least 20 weight percent water.

18. A composite medium of claim 17, wherein a layer B2 comprising a thermoplastic composition that can be imaged by an ink jet printer using one or more inks comprising at least 20 weight percent water is present on at least one surface of substrate B1.

19. A composite medium of claim 18, wherein a layer B3 comprising a thermoplastic composition is present on at least one surface of substrate B1.

20. A method whereby the composite medium of claim 17 is imaged at the image-receptor layer A2 with one or more inks that comprise at least 20 wt.% water.

21. A method whereby the composite medium of claim 17 is imaged at the image-receptor layer A2 with one or more inks that comprise at least 20 wt.% water and the resultant imaged sheet A is placed with layer A2 adjacent to sheet B and sufficient heat and pressure is applied to effect a bond between sheets A and B to produce an imaged composite medium.

22. The imaged composite medium produced in claim 21.

23. A method whereby the composite medium of claim 18 is imaged on at least one of layer A2 and layer B2 with one or more inks that comprise at least 20 wt.% water and the resultant imaged sheet is placed such that layer A2 of sheet A is adjacent to layer B2 of sheet B and sufficient heat and pressure are applied to effect a bond between sheets A and B to produce an imaged composite medium.

24. A method whereby the composite medium of claim 19 is imaged on at least one of layer A2 and layer B2 with one or more inks that comprise at least 20 wt.% water and the resultant imaged sheet is placed such that layer A2 of sheet A is adjacent to layer B2 of sheet B and sufficient heat and pressure is applied to bond sheets A and B together.

25. A method whereby the product produced by the method of claim 24 is further applied to a surface selected from the group of paper, cardboard, metal, glass, wood, composite, and paint, and sufficient heat and pressure is applied to adhere it thereto.